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Skin Diseases.

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THE OLEATES AND OLEO-PALMITATES IN SKIN DISEASES.

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At the meeting of the Society in 1879, I called attention to the oleates for dermic medication, and spoke at length upon the great value that they possessed over the ordinary ointments then in general use. At that time the oleic solutions of mercury, atropia, and morphia were considered in their application to cutaneous diseases, and I also brought forward and showed, for the first time, specimens of the oleates and bismuth. These supposed oleates were only oleic solutions, and their high price, indefinite and unstable character caused Dr. Lawrence Wolff, of Philadelphia, who had been informed by me of many negative results from their use, to make a series of experiments, which resulted in the production of chemically true oleates.

Oleates must not be considered merely as solutions of oxides in oleic acid, as previously described, for, according to our present views of chemical philosophy, they were nothing else as heretofore manufactured, but rather as definite chemical compounds or salts having no excess of either their acid or basic radicals. While the oleic solutions could not have therapeutically presented results different from those of the oxides employed in solution, the oleates themselves present a much different action by being in a chemically readily diffusible state. To speak of a five or ten per cent. oleate is quite as absurd as to do so of a five or ten per cent. sulphate of quinine, morphia, or atropia, which we know to be compounds of a definite character. These salts, while possessing more efficacy at once, are of a stable character, very different from the oleic solutions heretofore used; and by containing less of the expensive oleic acid, they are therefore less costly, an item which, for their practical application, is evidently a most important one. Oleate of mercury, as heretofore prepared, is well known to be unstable, and consequently unreliable, because of the presence of a large amount of free oleic acid, which, being a readily oxidizable body, soon deprives the mercuric oxide therein of its oxygen, precipitating a greater portion of it, if not altogether, in form of mercurous oxide and metallic mercury, which all of you have probably observed at the

bottom of such preparations. Such cannot be the case in chemically combined or true oleates, whose action will be a uniform and reliable one.

Dr. Lawrence Wolff, of Philadelphia, has found the best and most ready method for preparing oleates to be by the double decomposition of sodium oleates with solutions of neutral salts, and as a general method of their manufacture proposes the preparation of the former by a saponification of oleic acid with a solution of sodium hydrate. A solution thereof in eight parts of water is then precipitated by the salt required; this precipitate washed and dried yields the oleate required. Of the manner of preparing each individual one, I will speak under their respective headings. For greater economy's sake the oleo-palmitates—double salts of oleic and palmitic acids with metals or bases required—may come into use; and, in fact, when manufactured from a soap of the oil of sweet almonds—which contains less palmitic acid than other oils—may for dermic medication answer almost as well.

OLEATE OF MERCURY.

Oleate of mercury is prepared by precipitating a solution of sodium oleate with mercuric chloride. Or a mercuric oleo-palmitate may be derived by using the sodium oleo-palmitate instead. The precipitate will readily form on boiling the solution. It may, for use, be mixed with either the paraffinates, or, better still, lard or lard oil. An ointment containing one part oleate to three parts lard will give what I term a twenty-five per cent. ointment of oleate of mercury; while, if mixed with equal parts of lard oil, it forms a fifty per cent. ointment.

It is the best local stimulant and alterative application of all the mercurials. It is a yellowish chemical combination, with a fatty smell, and of an unctuous consistence. It will produce, when used on the unbroken healthy skin, marked stimulation bordering on congestion; while upon any tumors, indurations, glandular enlargements, and thickening of the skin, it has a most valuable resolvent and alterative action. Its advantages over the old mercurial ointments now generally in use, are:—

First.—Its chemical combination, which makes it better absorbed by the skin.

Second.—Its solubility in fats, contrary to the suspension of other mercurials therein, gives it great penetrating and absorbing action, manifesting itself in prompt remedial effect.

Third.—It possesses also the advantage of obviating the rancidity which is sure to occur with other mercurial ointments.

Fourth.—It is more economical and cleanly. It is more economical—as a small piece suffices for its remedial action. It is cleanly—for by its rapid absorption into the tissues it will not stain the linen.

In the inunction treatment of syphilis, which has unjustly fallen into disuse, this oleate can be advantageously used, especially when there is derange-

ment of the gastro-intestinal canal. It is not necessary, in my experience in using this oleate for inunction, to give the patient any preparatory treatment, such as diet and baths, prior to an application, to render the skin supple and better able to absorb the mercurial; neither will it be necessary for the patient to be enveloped in linen or cotton, or to apply the mercurial under very high temperature. It can be applied in a simple, cheap, and clean manner, when the patient retires at night, by gently rubbing in a small portion of the stronger ointment, about the size of a small marble, on the thighs, the limbs, or on the sides of the trunk. It will be rapidly absorbed, will only leave a reddened surface on the skin, and will not dirty up the linen, or cause the vexatious routine method of old mercurial inunction treatment. It will, however, be necessary to apply cautiously this powerful remedy, as its deep penetration into the skin, and its quick diffusion, will often bring about more rapid constitutional effect than the ordinary mercurial ointments.

I employ it with success in indurations after abscesses; in excess and deficiency of pigment, either as a disease or from applications, or as an effect of disease; in indolent papules, tubercles; in obstinate ulcers, particularly the syphilitic; and in cases of enlarged testicle. In the indolent and chronic stage of psoriasis, in which the patches are thickened, harsh, dry, and cracked, the application of the oleate causes them to rapidly disappear. It is necessary, however, in case of psoriasis, before applying the oleate, to remove the scales by alkaline baths, oils, water-dressing, or wet packing. In all forms of vegetable parasites the oleate, lightly smeared over the surface, will not only kill the parasite on the surface, but will frequently, by its great penetrating and diffusive action, pass into the hairs, the follicles, and sebaceous glands and destroy the fungus that may have been propagated beneath the skin. In phthiriasis, or lousiness of any part of the body, the oleate destroys alike the parasite and the nits, which sometimes escape other mercurial preparations which are suspended in a mechanical way.

Lastly, the oleate of mercury may be employed advantageously in combination with other oleates. Thus, ten or twenty grains of it, mixed with one drachm of the ointment of the oleate of lead, is often very effective in chronic acne and eczema, especially in the fissured variety of the latter, which is so common on the plantar and palmar surfaces. In all the syphilitic skin eruptions, and in superficial ulcers, one drachm of the oleate of mercury with three drachms of the oleate of bismuth, or the same quantity of the ointment of the oleate of lead, acts quickly and decidedly. The oleate of mercury, in the proportion of one or two drachms to one ounce of oil of ergot, forms one of the best and most efficacious oily applications that can be used to that common affection, loss of hair, in which the scalp, or the parts on which it occurs, looks harsh and dry, the hairs being dull and lacking their peculiar lustre.

OLEATE OF ZINC.

Oleate of zinc is made by decomposing a sodium oleate, with a saturated solution of zinc sulphate; boiling out and drying the precipitate, and then reducing it to an impalpable powder, which is rapidly accomplished. One part thereof, melted with three parts of a fatty vehicle which yields the ointment, I have been in the habit of using. I have obtained, however, the very best results with the oleate of zinc alone, and not mixed with a fatty diluent; which is a fine pearl-colored powder, with a soft, soapy feel, very much like powdered French chalk.

When dusted over a denuded surface it will have, by the combination of the oleic acid and zinc, a stimulating as well as an astringent action. It is *par excellence* the remedy for excessive sweating, or in cases of hyperdrosis and osmidrosis. I have been using it for more than a year, dusting it over the surface in patients suffering from an increased flow of sweat about the palmar and plantar surfaces and around the axillæ and genitalia. It has relieved and permanently cured some of the most distressing cases suffering with excessive secretion about the feet, in which the epidermis had macerated and peeled away, leaving a tender and exposed skin, and giving rise to a very disagreeable odor. It is likewise most efficacious as a lady's toilet powder, particularly to those who are afflicted with shining faces in the summer, called seborrhœa oleosa. It is the most valuable and the most reliable remedy in that commonest variety of eczema known as eczema visiculorum. I have witnessed, and also those who have been in attendance in my clinics during the past winter, marvellous results from dusting the oleate over those in whom the extremities, and even the trunk, had been covered with small vesicles, swollen, hot, inflamed, the parts constantly weeping, and the itching so intense that the patient would rub and scratch the surface until it become perfectly raw; in such cases I have frequently seen the discharge dry up, and the swollen and inflamed skin resume its normal condition, by the threefold action of the oleate, in protecting, stimulating, and astringing the parts. If this oleate be dusted on an inflamed surface that is hot and tumid, such as is found in erythema about the groins and axillæ, and in herpes, particularly of the genitals, it will cling to the skin and will not fall or brush off like ordinary dusting powders. These advantages prove beyond a doubt the superiority of the oleate of zinc over the ordinary ointments and powders in the class of skin eruptions I have just named.

OLEATE OF LEAD.

Lead oleate is derived by precipitating a sodium oleate with a solution of lead sub-acetate. The washed and dried precipitate melted with equal parts of lard gives the ointment I designated as ointment of lead oleate.

This ointment of the oleate of lead, which I also first described in 1879, differs very materially from the imperfect oleic solution I presented at that

time. The present ointment of the oleate of lead is cream-colored and semi-solid, of the consistence of simple cerate. It has, when applied to the denuded skin, both a combined sedative and astringent action, and will arrest morbid discharges, protect the surface, and allay irritation. It is also more readily absorbed than Goulard's cerate or Hebra's litharge ointment, and it is more easily and cheaply prepared. It is of the greatest benefit, and often very successful in allaying the inflammation, and checking the discharge and itching of pustular eczema that is so annoying to young infants. In papular eczema, and in that variety of the same affection that is often found in the flexures of the joints, around the axillæ, the inner part of the thighs, and the perineum, this oleate very effectually allays the intense irritation, and very often quickly restores the parts to their natural healthy state. It is a useful remedy in simple lichen, and in those hard, indurated papules in acne about the face and back, and in the second stage of rosacea; and its value is often very much enhanced in these affections to add to two drachms of the ointment about one drachm of the bismuth oleate spoken of below. It has very often a beneficial effect in that well known fissured form of eczema present on the palmar and plantar surfaces. Should, however, the inflammation and cracking be very severe and deep, and require a marked stimulation, the addition of twenty or thirty drops of the oil of cade to two drachms of the ointment of this oleate will increase very much the curative action on the parts. In ordinary cases of scabies or itch, four drachms of this ointment mixed with half a drachm of milk of sulphur, yields more promptly than when the latter salt is combined with other bases. The ointment of the oleate of lead soothes the irritation set up by the parasite, while by its great penetrating action it carries the sulphur deeper into the skin, and permits the latter ingredient to act more decidedly on the parasite.

OLEATE OF COPPER.

Copper oleate is obtained in a similar manner as the lead oleate, by double decomposition with a saturated solution of copper sulphate. The washed precipitate melted with either four or nine parts of cosmoline, fat or lard, gives respectively a twenty or ten per cent. of oleate of copper ointment.

When applied to the unbroken skin, the oleate of copper ointment rapidly penetrates deeply into the parts, particularly into the follicles, and will produce slight stimulation. On the other hand, if brought into contact with broken skin, which it stimulates, an insoluble albuminate is formed, which coats over the surface and supplies the place of the abraded skin.

The most successful results that I have as yet had with the ointment of the oleate of copper has been in rapidly curing cases of ringworm. My attention was directed to this preparation in the following manner: For several years I have had patients tell me at the hospital and in my practice that they cured this or that member of the family of ringworm by putting an old copper penny in vinegar and applying the liquid to the patches. Some, however, re-

sisted this treatment, and members of the latter class were usually brought to me with the statement that they had cured other children by the copper penny in vinegar, how was it that it did not do this case any good? Judging that while this coppery liquid might destroy the fungus on the surface, if the parasite after a time passed into the follicle at its lowest depth and invaded the hair bulbs, it could not effect it in any way, I therefore reasoned that if the copper solution had the power to kill the parasite on the surface, why could it not do the same within the follicles, providing it could be carried there? Remembering the great penetrating action of oleic acid, I had it combined with copper and mixed with a fatty base, and applied on an inveterate and extensive case of ringworm on the scalp of a child that had been treated by numerous remedies in vain, and in six weeks the case was completely cured. Other cases, both of ringworm on the scalp and body, were tried with equally good results. The ointment of the oleate of copper should generally be used in cases of ringworm, in the following manner: The parts should be first washed with soap and water, and in case the hairs be involved the hair should be cut short, and, after drying, a small piece of the ointment of this oleate, in proportion to the size of the patch, should be lightly rubbed over the surface. The same procedure should be repeated night and morning, until all traces of the disease have disappeared. The parts should only be washed about once in ten or twelve days, as the frequent use of water may prevent the oleate from penetrating to the lowest depth of the follicle in order to successfully destroy the fungus. It may also be necessary to pluck out the diseased hairs or epilate in very inveterate cases, although I have cured some without being compelled to get rid of the diseased hairs in this manner. If this method is carefully followed, the oleate just named will no doubt effect a complete cure in some of the most obstinate cases. I have also used this ointment, spread on old muslin, for indolent ulcerating surfaces, and have found it an excellent cleanser and healer. It acts by condensing the tissues and constringing the blood-vessels, and thus lessens the determination of blood to the part. It will relieve, and some of my patients have reported cures, from its application to hard and horny warts, corns and bunions.

OLEATE OF ALUMINIUM.

Aluminium oleate is also prepared by decomposing sodium oleate with aluminium sulphate; the washed precipitate mixed with equal parts of lard gives the ointment of aluminium oleate I shall speak of. The ointment thus prepared is semi-solid, dark brown in color, and has a most powerful astringent action. It has the most decided action of all the other oleates in checking muco-purulent discharges that occur in one of the varieties of eczema. For this purpose it can be applied with advantage around the arms, groin, or buttock of those who have excessive discharge from the friction of those parts, particularly in infants and children, and

so check the profuse secretion, or bring the parts into a suitable state for other remedies. It can also be employed with success as a dressing in foul ulcers, abscesses, sinuses, burns and scalds, from its power to coagulate albumen, constringe the vessels by its antistypic action and checking or correcting the secretion of muco-pus.

OLEATE OF BISMUTH.

Bismuth oleate can only be obtained by first preparing a crystallized bismuth nitrate, dissolving it in glycerine, and decomposing with this mixture the sodium oleate. It is of ointment consistence, and should be used as thus obtained.

This combination, which I first used some years ago, and described before the Society in 1879, was manufactured at that time in but a crude manner in comparison to the pearly gray and soft bland ointment I have been using for the past two years. It possesses an emollient and slightly astringent action, and is a most valuable remedy in soothing and relieving cutaneous irritation.

In pustular eruptions, particularly in sycosis, the oleate of bismuth, lightly pencilled over the surface with a camel's hair brush, will greatly relieve the engorgement of the parts; it will also often abort the pustules, and will cause to disappear the prickling and itching feeling that so often annoys and wears out the patient. It is equally efficacious in superficial erysipelas, and in sunburn, by soothing and relieving the high inflammatory action of the parts. The various varieties of eczema, especially that form, the papular, which is usually met with in the flexures, are very amenable to the application of this oleate. It is particularly useful pencilled over rosacea, or what is commonly known as a chronic inflammation of a portion of the face; it often subdues intractable cases of this disease, although I apply the ointment usually after thoroughly depleting the parts with a needle-knife. It soothes the hyperæmic skin, relieves the engorgement of the glands, and thus brings comfort and ease to the patient. It will often, when applied freely over the surface in cracked and sore nipples, not only soothe, but will arrest the dry and excoriated condition of the parts.

Although bismuth, in the form of a mixture, has long been used as an injection in sub-acute gonorrhœa and gleet, yet I know of no medicine that will act so well in many cases of these affections as the oleate of bismuth. I have found it very serviceable in sub-acute gonorrhœa and gleet to pass a bougie covered with the oleate of bismuth, and allow the instrument to remain in the canal for a few moments. In more obstinate cases, I have had good results in wrapping a wax bougie with a thin layer of cotton, covering the surface with oleate of bismuth, and passing the combination into the urethra.

OLEATE OF IRON.

Iron oleate: Precipitate with ferrous sulphate from sodium oleate on boiling is soon converted into ferric oleate, and as such may either be used pure, or if mixed with an equal amount of a fatty base, as my ointment of iron oleate.

When prepared in the above manner it occurs in a reddish-brown paste, inodorous, having a styptic taste, and readily soluble in fats which hold in combination about thirty per cent. of the oxide of iron, forming a powerful and important therapeutic remedy.

It is free from local irritation when used topically, but when brought in contact with an ulcerating surface it has a very mild astringent action. It can, therefore, be used, as I have tested it, both for a constitutional and local effect. I have already had some excellent constitutional (systemic) results by having a small piece of this ointment rubbed in the axillæ and inguinal regions two or three times a day. The effect of this ointment has been very good on some upon whom I have applied it, who had a deranged state of the digestive organs, and inability to bear the ordinary chalybeates; weak pulse, and a pale and flabby condition of the skin. I have also been using it with marked effect in some cases of scrofula. I am now testing its therapeutic action, not only in cutaneous affections, but also in many other diseases, from which I expect shortly to hear favorable and satisfactory results. It will, no doubt, take the place of other chalybeates, particularly when the latter are not well borne by the digestive organs, and will probably constitute one of the best constitutional tonic and local astringent remedies.

OLEATE OF ARSENIC.

Arsenicum oleate must be derived by making arsenious chloride by the cautious saturation of hydrochloric acid with arsenicum metal. The solution thus obtained precipitates from sodium oleate the oleate required, which I employ in the quantities of twenty grains to one ounce of fatty base, as my ointment of arsenicum oleate. It is in this form a soft yellowish ointment, having no change on the skin except where abraded, or in wounds, ulcerating and granulating surfaces, in which condition it will excite active inflammation and destroy the tissue of the parts to some depth. In lupus, especially the ulcerating varieties, the constant application of the ointment of arsenicum oleate will destroy cell infiltration in a mild and comparatively painless manner. It may be applied with almost as good result in the tubercular form of lupus, providing the parts be thoroughly scraped so as to bring the oleate in contact with an abraded surface which will greatly enhance its action. It can be used very satisfactorily in the ulcerating variety of epithelioma, and will be better borne for a longer period to the parts than any other form of arsenic. I have likewise employed it after puncturing or scraping the surface to destroy warts,

condylomata, nævi, corns, horns, and old granulations. In some instances I have incorporated in this oleate, with a very happy effect, opium, belladonna, hyoscyamus, and arnica.

OLEATE OF SILVER.

This new oleate, like the others, is prepared by precipitating the sodium oleate with a saturated solution of silver nitrate, washing the precipitate with boiling water and drying it, after which it is reduced like the zinc oleate to a fine powder. One drachm of this dissolved in an ounce of fatty vehicle forms what I have employed as ointment of silver oleate. Made in this manner it occurs as a pulverulent salt of brownish-yellow color, which, if mixed with lard in the proportion from ten to sixty grains of the oleate of silver to one ounce of lard, forms a dark brown, soft, and pliable ointment.

This oleate in its natural form sprinkled over old chronic ulcers, bed sores, and exuberant granulations, will set up a healthier state in the parts. The best effects I have experienced from using the ointment of this oleate, which not only coats over an abraded surface by combining with the albumen, and so protecting it from the air, but also causes powerful contraction of the blood-vessels and thus condenses the tissues. It is a safe and efficacious remedy in erysipelas, and can be used either around the margins to prevent the inflammation from extending, or can be applied weak, ten to twenty grains to the ounce of lard, over the inflamed surface. It has reduced the active inflammation by being constantly applied in several cases of the superficial variety of lupus. It will be serviceable applied to boils and carbuncles, and may often arrest pustulation in its early stage. An intolerable itching that sometimes occurs around the meatus auditorius, the anus, and the genitalia may often be quickly relieved by applying this ointment either alone or combined with opium and belladonna. The advantages that the ointment of the oleate of silver possesses over the ordinary silver ointments are, its stability and prompt action, and by being less painful and milder in its curative action, and still penetrating deeper into the affected part.

The *oleates of quinine*, and those of *morphia*, and also *atropia*, are made by precipitating a sodium oleate with the aqueous solution of these salts; and for use should be mixed with the requisite amount of either olive or lard oil.

The oleate of *magnesium*, *lithium*, *calcium*, *antimony*, *tin*, and *others*, are also readily made by similar processes, but are at present of little therapeutic value as far as dermic medication is concerned, and are mentioned only for the benefit they may ultimately prove for internal exhibition.

While my experiments with these new preparations cover a period of almost two years, their efficacy and application in the treatment of dermic affections I do not claim yet as having exhausted; and while daily I find new and valuable use for them, I will not speak of them further at this time, when they

are still in their experimental stage, and would court the trial of them by other practitioners, and communications from them as to their results.

I have thus, in a brief and practical manner, endeavored to describe, for the first time, the therapeutic action of chemically true oleates; although I formerly brought forward some of the same preparations as oleic solutions before the Society of 1879.

A few years prior to that period, Mr. John Marshall, of England, published a paper on the treatment of persistent inflammations by the local applications of solutions of oxide of mercury and morphia in oleic acid. It will be observed, however, that these preparations, too, were only solutions, and not the true chemical oleate compounds that I have just considered. While, therefore, the credit is due to Mr. Marshall for suggesting the oleic solutions referred to, I claim to have first used the true chemical oleates, and to have used and published an account of the oleates of lead and bismuth (see *Transactions of State Medical Society of Pennsylvania for 1879*) long before a description of these oleates was published and claimed by some of the foreign journals for Drs. Crocken and McCall Anderson.

The oleates, in the form in which I have shown, enjoy the widest range of therapeutic application. The superior advantages which they possess over the ordinary ointments, I will consider under the following five heads:

First.—Their deep penetration. *Second*.—Their freedom from rancidity. *Third*.—Their cleanliness of application. *Fourth*.—Their great economy; and *Fifth*.—Their antiseptic action.

First.—Their deep penetration. The oleic acids in their combination gives them active solvent powers and facility and ability to penetrate rapidly into animal textures, while rendering any chemical ingredient with which it is combined more active and effective in dermic medication.

Second.—Their freedom from rancidity. The same acid held in the combination, will always keep the fat, with which the oleate is mixed, pure, sweet, and free from rancidity.

Third.—Their cleanliness of application. The rapid absorption of the oleates into the tissues will prevent any unpleasant disfigurement of the parts, will not stain the linen, and will give comfort and ease in their application.

Fourth.—Their great economy. The oleate should not be rubbed in vigorously like the ordinary mechanical ointments, which require considerable friction; they only require to be lightly smeared or applied over the surface in very small quantities, hence, their great economy.

Fifth.—Their antiseptic action. The oleic acid in combination has also a most happy and effective action in rendering the oleates antiseptic or deodorant, upon all discharges and suppurating surfaces.

In addition to the great advantages just enumerated, the oleates likewise possess the power of having incorporated into them almost any ingre-

dient that can be used in dermic medication. Such preparations in different proportions, according to the amount desired to be used, as carbolic acid, creasote, sulphur, tar, arrow-root, starch, iodine, iodide of potassium, chloral, camphor, belladonna, opium, hyoscyamus, nux vomica, ergot (particularly the oil thereof), cinchona, etc. I can better illustrate this point by appending a few of the prescriptions generally used at the American Hospital for Skin Diseases, in Philadelphia, which will show the manner of combining and incorporating other drugs. For instance, the following prescription we use in fissured eczema of the plantar and palmar surfaces:

R Hydrargyri Oleatis, - - - - $\frac{3}{4}$ ss.
 Olei Cadini, - - - - 3 ss.
 Cerati Simplicis, - - - - $\frac{3}{4}$ ss.

M. S. Rub well into the part, after macerating in hot water, night and morning.

Again, in infantile eczema, the following is often used:

R Unguenti Plumbi Oleatis, - - - $\frac{3}{4}$ ss.
 Pulveris Marantæ, - - - 3 j.
 Cerati Simplicis, - - - - $\frac{3}{4}$ ss.
 Olei Olivæ, q. s. ft. Unguentum Mollis.

M. S. Apply lightly over the surface, and in case of much pustulation of the surface or a swelling of the glands, the addition of one-half to one-quarter of a drachm of the oleate of mercury to the above will be very advantageous.

Further, the active inflammation of the blood vessels and tissues of the face, as in rosacea, may be checked by:

R Unguenti Plumbi Oleatis, - - - -
 Bismuthi Oleatis, - - - - ää 3 j.

M. S. Apply a very small piece, about the size of a toilet pin, night and morning. If the parts should become much thickened and indurated, add one or two drops of creasote.

As a last illustration: In eczema of the anus, particularly when the trouble is due to external piles, the following will give very great relief from the incessant and intolerable irritation of the parts, and often cure the disease:

R Bismuthi Oleatis, - - - - 3 ij.
 Extract Opii, - - - - gr. x.
 Extract Belladonnæ, - - - - gr. x.
 Cerati Simplicis, - - - - $\frac{3}{4}$ ss.

M. S. Apply frequently.

The above are but a very few examples of the addition of other drugs that can be made advantageously to the oleates.

Now that I have given the advantages of the oleates, I wish to add in conclusion the objections—for an emollient and soothing action—to using the commonly accepted applications to the skin that are now used often ineffectually and at times injuriously. These objections are, first, to the ordinary ointments, and, secondly, to the petroleum products.

It is a well-known fact to you all that the ordinary ointments have no power of penetrating deeply into the derma; that the combinations which they form with other ingredients, with which they are incorporated, are usually mechanical, and as a result the fat and the drug are usually found after application caked upon the outside, fulfilling very often only the part of a protection to the diseased surface beneath. They also by the collection upon the surface soil the linen, run off or trickle down upon other parts, interfering with cleanliness and often disfiguring the person. Ointments likewise kept for any length of time will become rancid, and if applied in such a decomposed state—which I have seen in many instances—will excite continued inflammation. Again ointments must necessarily be costly, as they are usually prepared and prescribed in large quantities, and as considerable amount is required to cover a given spot or surface, allowing for the waste on the adjoining parts and that which runs off and stains the linen.

I next pass to the consideration of my objections against using the petroleum preparations. These products are as objectionable as bases as the other ingredients usually used for ointments. They even possess feeble power to penetrate the skin, if any at all, than animal fats which have more affinity for the integument. They are also melted by the temperature of the parts, and run off largely on the surrounding surface; and will thoroughly saturate all the linen brought in contact with them. Further, the petroleum products retain some stimulating constituent left after their manufacture, which will prevent them from having an emollient action, and which proves a very great hindrance to their use as external remedies, providing you wish to soothe and allay active inflammation. In addition to this I will state that the craze for these paraffinate or petroleum products seems gradually on the wane, not only here but also in Europe.

In investigating this subject I have found that their absorptive power for a penetrating action into the skin is so feeble as to almost cause them to be excluded as such. Irritant ointments of veratria and other substances which I had made respectively of cosmoline, vaseline, and of simple cerate, manifested themselves in the former two preparations, as almost inert; while the activity of that made with simple cerate very soon became evident. Since making these observations I was pleased to find an eminent authority, Dr. Herrman Hager, make similar statements in his celebrated work on Pharmaceutical Practice, as follows: "The use of vaseline (cosmoline) in place of lard or an ointment in such mixtures which contain a remedial agent intended for absorption by the

skin, is much to be discouraged, as vaseline (cosmoline) prevents the absorption thereof."

From all that I have here stated you can readily see that all the objections both to the ordinary ointments and the petroleum products, are overcome in the active solvent powers of the oleates; their deep penetration, their chemical combination, their freedom from rancidity, their great economy and their antiseptic properties. A great drawback, however, to the general adoption of the oleates will be lack of knowledge that the majority of pharmaceutical chemists have, at the present time, of their manufacture.

A most striking instance of this kind recently occurred to me. Whilst bowing a patient out from my office, I was saluted by an individual, who informed me in very loud words, so as to be heard by those who were sitting around, that he had received a prescription of mine, which called for the oleate of zinc to be dusted over the surface. "Now, Doctor, I must inform you that no such preparation exists! The oleate of zinc is used as an ointment." A few moments' conversation clearly showed me that the individual had no knowledge whatever of the manufacture of the oleates, and I distinctly told him so in the presence of my patients for his impertinence and rudeness in endeavoring to correct a supposed blunder I had committed, in that public manner.

I experience almost similar difficulties daily in my private practice. Thus I will often prescribe a certain oleate and be surprised to see no change in my patient, but after careful investigation, which I have made in several instances, by having the patient bring me the oleate, I have found either a substitute or an oleic solution in place of the remedy ordered. Again it has been my misfortune to have some pharmaceutical chemist decry the action of the oleate to my patient, and from these persons I have also learned that they knew nothing whatever about its manufacture. An ordinary mechanical ointment full of lumps more easily mixed in the old stereotyped manner, or a spatula full of a petroleum product incorporated with some metal, was their idea of a proper kind of a salve that should be used and would be efficacious. You will, nevertheless, find good, honest and straightforward chemists, who, if they do not understand the manufacture of the oleates, will procure them for you, or will go to work and make them under your direction, but be careful to examine their products and see that they possess all the physical properties which I show you in these most excellent specimens of true and staple oleates.

Concerning Fluid Extracts.

We are frequently made aware of the existence of serious misapprehension in the minds of some very worthy physicians, and even druggists, in regard to the functions and properties of fluid extracts, particularly such as necessarily are and should be prepared with a strongly alcoholic menstruum. We have not far to look for the cause of these misconceptions, and it is in order to correct them that we desire to call the attention of our friends to some of the more salient features presented by these preparations.

There is a large class of drugs of which we can name, for illustration, such individuals as buchu, eucalyptus, cannabis indica, aconite, yerba santa, cubebs, lupulin, savin, valerian and ginger, in which the activity of the drug depends entirely, either on the volatile oil, resin or alkaloid, or on their combinations. These principles being most largely soluble in strong alcohol and almost insoluble in water, the use of the first named liquid is, of course, made imperative when it is proposed to manufacture a fluid extract which shall properly and fully represent the drug. A re-statement of the well known general properties of these drugs might seem almost superfluous, considering that the pharmacopœias and text books are so explicit on these points, were it not for the fact that a later education has been attempted, in a very sordid and unworthy interest, by which it is proposed to unlearn this knowledge, or at least to blind us to it by interposing apparent excellencies in so-called fluid extracts which a close inspection shows, however, to be superficial and unreal. We refer now to a class of manufactures with which some of our competitors are endeavoring to flood the market, and the claim of superiority in regard to which is based principally on the fact that they will make a much *clearer mixture with aqueous liquids* than old-fashioned, honestly-made extracts. As an illustration of the principle involved we will select cannabis indica, whose active ingredient, of a characteristic resinous nature, is insoluble in water, soluble in strong alcohol, and soluble to but a limited degree in a mixture of the two, or diluted alcohol. Were we to prepare from sixteen Troy ounces of this drug, a pint of fluid extract with strong alcohol, and from another sixteen Troy ounces a like quantity of extract with diluted alcohol, we should certainly find that the extract prepared with *dilute alcohol* would make a *handsomer, clearer mixture with an aqueous liquid* than the one made with stronger alcohol. Need we ask why? Is it not self-evident that the preparation with dilute spirit is woefully deficient in the resinous ingredients of the plant, and that, therefore, a heavy discount must be made on its activity as compared quantitatively with the other? And yet this class of fluid extracts is presented to the profession with claims for preference based entirely on this feature of their making a *handsome appearing mixture*, at the *sacrifice of medicinal activity!* While it has always been our desire to minister to the innate taste for the beautiful, which requires by preference an elegant preparation, and which stimulates all improvements which tend to that end, we cannot admit that a sacrifice of principle is ever justifiable in the attainment of that object. In the case of cannabis indica just referred to, we have always proceeded by using, in the first place, an assayed drug, known to con-

tain sufficient resin to conform to an established standard, and then exhausting the drug with the proper liquid, strong alcohol.

Our preparation, therefore, *will, and should make a turbid mixture with water or aqueous liquids*, from separation of the resin which is insoluble in such fluids. The extent to which the resin separates, and renders water turbid, may be even used as an approximate test of the strength of the preparation; for it is very evident that the more resin, oleoresin or other substance insoluble in water, is present in the alcoholic liquid, the greater will be the amount separated when this is thrown into water, and the greater, therefore, the consequent turbidity.

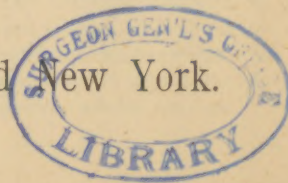
These remarks will apply equally to all the drugs mentioned as members of this class; so we need, therefore, not multiply instances to impress a fact which becomes self evident when the premises are taken into consideration. We have enumerated but a few of the drugs whose virtues are constituted so as to require the use of a strongly alcoholic liquid for extraction, and likewise a liquid of the same composition for holding these principles in solution after their separation from the parent drug.

In view of these facts, there is then serious mischief threatened in the introduction of fluid extracts which from poverty of spirituous contents, although possessing a handsome appearance and other apparently desirable properties (particularly a low price), do not act handsomely, and besides bring about one vicious result:—they lead to the employment of larger doses, for it does not take the prescriber long to discover that his patient can bear larger and still larger doses with impunity, and in fact needs such apparent over-doses to produce the desired effect. Let such a prescriber, however, obtain a conscientiously prepared extract in place of the one he has been using and give the same doses, and curiously enough, his spleen is usually vented on the really good representative of the drug for having produced unlooked for, or perhaps even serious results, from a very evident overdose, and the preparation, instead of a perverted education and misplaced confidence, receives the blame.

We think it will need but little argument to convince those who have had the least experience, that of different methods of administration, that one should certainly have the preference in which exactness of dose is not only possible but inevitable, while the other which combines chance convenience with uncertainty of dose should be as much avoided.

Now, in regard to the method of administration of this class of fluid extracts, we desire to make a few suggestions. In accordance with the proposition that that method should have the preference by which exactness of dose is secured, we recommend, where it is absolutely necessary to dilute such a fluid extract prior to the moment of administration, the employment of a viscid liquid for this purpose, such as mucilage, syrup or glycerine. Much better, however, is the method of dropping the dose, *at the moment it is wanted*, into water, milk or other diluent, and administering while the portion precipitated, and insoluble in water, is still in a *finely suspended condition*, and *before its particles have had time to separate and cohere*. This latter method renders impossible the gathering of such separated resinous or oily particles into a clot, which may and occasionally does, convey in one dose the active and often powerful ingredient intended for distribution among a much larger number of doses, thereby introducing the element of uncertainty and risk in the administration of the remedy.

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